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09/894,422	06/28/2001	Michael H. Wright	EMC-038PUS	6882

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EXAMINER
DUONG, THOMAS

ART UNIT	PAPER NUMBER
2445	

NOTIFICATION DATE	DELIVERY MODE
11/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	09/894,422	WRIGHT ET AL.
	Examiner	**Art Unit**	
	Thomas Duong	2445	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>15 October 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>28-68</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>28-68</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>28 June 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20081108

DETAILED ACTION

Request for Continued Examination

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR

1.17(e) has been timely paid, the finality of the previous Office action has been

withdrawn pursuant to 37 CFR 1.114.

2.   Amendment received October 15, 2008 has been entered into record. *Claims 28-68*

remain pending.

Response to Amendment

3.   This office action is in response to the Applicants' Amendment filed on October 15,

2008. Applicants amended *claims 28, 45, and 56*. *Claims 28-68* are presented for

further consideration and examination.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

5.   Claims 56-58 are rejected under *35 USC § 101* because the claims are not limited to

tangible embodiments since they do not claim physical articles or objects as part of the

claims to establish a statutory category as a machine or manufacture, and they are

clearly not to a process or composition of matter. As claimed, an *"computer-executable*

logic contained on a computer-readable medium and which is configured for causing the

following computer-executed steps to occur" fails to fall within a statutory category of

invention; because, referring to the Specification, *"The methods and apparatus of the*

present invention may also be embodied in the form of program code that is transmitted

over some transmission medium, such as over electrical wiring or cabling, through fiber

optics, or via any other form of transmission. And may be implemented such that herein,

when the program code is received and loaded into and executed by a machine, such as

a computer, the machine 20 becomes an apparatus for practicing the invention. When

implemented on a general-purpose processor, the program code combines with the

processor to provide a unique apparatus that operates analogously to specific logic

circuits" (Specification, pg.8, lines 15-18). As such, the above claims are not limited to

statutory subject matter and are, therefore, non-statutory. Hence, in order to overcome

this *35 USC § 101* rejection, the above claims need to be amended to include only the

physical computer media and not a transmission media or other intangible or non-

functional media.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

7.   <u>Claims 28, 45, and 56</u> are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kleiman et al. (US006574591B1), in view of Kleiman et al. (US006604118B2), and

further in view of Barton et al. (US006023584).

8.   With regard to <u>claims 28, 45, and 56</u>, Kleiman '591 discloses,

- *discovering logical information related to the one or more volumes of data that*

  are part of the first volume group on the first computer system; (Kleiman '591,

  col.1, line 10 – col.13, line 60)

  Kleiman discloses, *"One preferred embodiment determines a first set of block*

  numbers (BNs), determines where the storage blocks referenced by these BNs

  are to be stored, and updates the BNs accordingly" (Kleiman '591, col.1, lines 61-

  64). Hence, Kleiman teaches of determining (i.e., Applicants' discovering) a first

  set of block numbers (BNs) (i.e., Applicants' logical information). Kleiman

  discloses, *"A preferred embodiment uses BNs that are within a volume block*

  number (VBN) space. VBNs provide a contiguous flat address space for the

  storage blocks" (Kleiman '591, col.4, lines 38-40). Hence, Kleiman teaches of

  the BNs (i.e., Applicants' logical information) belonged (i.e., Applicants' related)

  within a volume block number (VBN) space (i.e., Applicants' one or more

  volumes of data that are part of the first volume group).

- *creating a map of the logical information to physical devices on the first computer*

  system, the map comprising: (Kleiman '591, col.1, line 10 – col.13, line 60)

  Kleiman discloses, *"The `generate image stream` procedure 203 may also*

  generate one or more block-lists that specify where storage blocks from the

  source file system are included in the image stream. The block-lists can indicate

which storage blocks include one or more block number (BN) pointers. The data

read from the source file system includes one or more block number (BN)

pointers. The `generate image stream` procedure 203 can also include a second

block-list that can be used to map blocks in the image stream to a second

storage block arrangement for the destination file system" (Kleiman '591, col.5,

lines 6-15). Hence, Kleiman teaches of block-lists (i.e., Applicants' map)

indicating which storage blocks from the source file system (i.e., Applicants'

physical devices on the first computer) are associated with the one or more block

number (BN) pointers (i.e., Applicants' logical information).

- *information identifying one or more devices associated with one or more*

  physical volumes containing the data; and (Kleiman '591, col.1, line 10 –

  col.13, line 60)

  Kleiman discloses, *"The block-lists can indicate which storage blocks include*

  one or more block number (BN) pointers. The data read from the source file

  system includes one or more block number (BN) pointers" (Kleiman '591,

  col.5, lines 9-12). Kleiman discloses, *"A preferred embodiment uses BNs that*

  are within a volume block number (VBN) space. VBNs provide a contiguous

  flat address space for the storage blocks" (Kleiman '591, col.4, lines 38-40).

  Hence, Kleiman teaches of block-lists (i.e., Applicants' map) containing

  information associating the storage blocks (i.e., Applicants' physical devices)

  with the volume block number space (i.e., Applicants' one or more physical

  volumes).

- *information providing definition and structured layout of volume groups, internal logical volumes and file systems on the first computer system;* (Kleiman '591, col.1, line 10 – col.13, line 60)

  Kleiman discloses, *"Another preferred embodiment reads data from the source file system (in accordance with a first storage block arrangement) creates an image stream"* (Kleiman '591, col.1, lines 64-66). Kleiman discloses, *"A preferred embodiment uses BNs that are within a volume block number (VBN) space. VBNs provide a contiguous flat address space for the storage blocks"* (Kleiman '591, col.4, lines 38-40). Hence, Kleiman teaches of reading data from the source (i.e., Applicants' first computer system) file system in accordance with a first storage block arrangement (i.e., Applicants' internal logical volumes and file systems) and volume block number space (i.e., Applicants' structured layout of volume groups).

However, Kleiman '591 does not explicitly disclose,

- *using the map to <u>create a second volume group on a second computer system having a second operating system,</u> where the logical configuration of the second volume group is identical to the logical configuration of the first volume group; and*

- *using the map to reconstruct on the second computer system the internal logical volumes and file systems of the first computer system and mount a duplicate of the one or more volumes of data on the second computer system.*

Kleiman '118 teaches,

- *using the map to <u>create a second volume group on a second computer system having a second operating system,</u> where the logical configuration of the second*

volume group is identical to the logical configuration of the first volume group;

and (Kleiman '118, col.1, line 5 – col.17, line 62)

Kleiman discloses, *"Select a storage image 220, in response to a first file system*

(or a snapshot thereof) to have an operation performed thereon. Form an image

stream 230 in response to the storage image 220. Perform an operation on the

image stream 230, such as backup or restore within the first file system, or

copying or transfer to a second file system" (Kleiman '118, col.14, lines 10-18).

Hence, Kleiman teaches of selecting a storage image (i.e., Applicants' first

volume group) of the first file system (i.e., Applicants' first file system) and

copying or transferring (i.e., Applicants' creating) to a second file system (i.e.,

Applicants' second operating system) on a second file server.

- *using the map to reconstruct on the second computer system the internal logical*

  volumes and file systems of the first computer system and mount a duplicate of

  the one or more volumes of data on the second computer system. (Kleiman '118,

  col.1, line 5 – col.17, line 62)

  Kleiman discloses, *"Select a storage image 220, in response to a first file system*

  (or a snapshot thereof) to have an operation performed thereon. Form an image

  stream 230 in response to the storage image 220. Perform an operation on the

  image stream 230, such as backup or restore within the first file system, or

  copying or transfer to a second file system" (Kleiman '118, col.14, lines 10-18).

  Hence, Kleiman teaches of selecting a storage image (i.e., Applicants' first

  volume group) of the first file system (i.e., Applicants' first file system) and

  copying or transferring (i.e., Applicants' creating) to a second file system (i.e.,

  Applicants' second operating system) on a second file server.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Kleiman '118 with the teachings of Kleiman '591 to *"[provide] techniques for duplicating all or part of a file system while maintaining consistent copies of the file system"* (Kleiman '591, col.1, lines 59-61). Kleiman discloses, *"Accordingly, it would be desirable to provide a method and system for duplicating all or part of a file system, which can operate with any type of storage medium without either relative complexity or expense, and which can provide all the known functions for data backup and restore. This advantage is achieved in an embodiment of the invention in which consistent copies of the file system are maintained, so those consistent snapshots can be transferred at a storage block level using the file server's own block level operations"* (Kleiman '118, col.1, lines 37-46).

However, Kleiman '591 and Kleiman '118 do not explicitly disclose,

- *using the map to create a second volume group on a second computer system having a second operating system, where the logical configuration of the second volume group is identical to the logical configuration of the first volume group; and*

Barton teaches,

- *using the map to create a second volume group on a second computer system having a second operating system, where the logical configuration of the second volume group is identical to the logical configuration of the first volume group; and* (Barton, col.1, line 6 – col.13, line 60)

Barton discloses, *"FIG. 2 is a flow chart illustrating the general flow performed for*

the installation and execution of a computer program according to the principles

of the present invention. Block 26 represents the computer booting an operating

system from a first data storage device. Block 28 represents the computer

mounting a first data storage device as one half of a mirrored volume. Block

30 represents the computer mounting a second data storage device as the other

half of the mirrored volume. Block 32 represents the computer synchronizing

the mirrored volume by copying data from the first data storage device to the

second data storage device. At some time during this process, but before

synchronization is complete, the mirrored volume can be accessed by users, as

indicated by Block 34, which represents a computer program being executed

from the mirrored volume. Block 36 represents the computer dismounting or

removing the first data storage from the mirrored volume, after synchronization

has been completed" (Barton, col.4, lines 23-40). Hence, Barton teaches of

synchronizing the mirrored volume (implying that the logical information between

the two volumes are identical) by copying data from the first data storage device

(i.e., Applicants' first volume group) to the second data storage device (i.e.,

Applicants' second volume group).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

the invention was made to combine the teachings of Barton with the teachings of

Kleiman '591 and Kleiman '118 to *"[provide] techniques for duplicating all or part of a*

file system while maintaining consistent copies of the file system" (Kleiman '591,

col.1, lines 59-61). Kleiman discloses, *"Accordingly, it would be desirable to provide*

a method and system for duplicating all or part of a file system, which can operate

with any type of storage medium without either relative complexity or expense, and which can provide all the known functions for data backup and restore. This advantage is achieved in an embodiment of the invention in which consistent copies of the file system are maintained, so those consistent snapshots can be transferred at a storage block level using the file server's own block level operations" (Kleiman '118, col.1, lines 37-46). Barton disclose, *"According to the invention, the first data storage device is provided with the computer program. To install and execute the computer program, a mirror is created between the first data storage device and the second data device. The computer program is then executed while the computer updates the second data storage device with the computer program of the first data storage device"* (Barton, col.1, lines 46-53).

9. *Claims 29-44, 46-55, and 57-68* are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleiman et al. (US006574591B1), in view of Kleiman et al. (US006604118B2), in view of Barton et al. (US006023584), and further in view of Markson et al. (US 20020103889A1).

10. With regard to *claims 29-30*, Kleiman '591, Kleiman '118, and Barton disclose, See *claim 28* rejection as detailed above.

    However, Kleiman '591, Kleiman '118, and Barton do not explicitly disclose,

    - *wherein the first and second operating system are selected from the group consisting of IBM AIX, Sun Solaris, or HP UX, and the computer-executed steps may be performed substantially independent of which operating system is selected from the group.*

- *wherein the map is configured as a flat file that is converted into a tree structure and further comprising the computer-executed step of using the tree structure to verify the accuracy of the information related to the volume group and the other logical information.*

Markson teaches,

- *wherein the first and second operating system are selected from the group consisting of IBM AIX, Sun Solaris, or HP UX, and the computer-executed steps may be performed substantially independent of which operating system is selected from the group.* (Markson, para.84)
- *wherein the map is configured as a flat file that is converted into a tree structure and further comprising the computer-executed step of using the tree structure to verify the accuracy of the information related to the volume group and the other logical information.* (Markson, para.83-84, 89, 94)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Markson with the teachings of Kleiman '591 and Kleiman '118 to *"[provide] techniques for duplicating all or part of a file system while maintaining consistent copies of the file system"* (Kleiman '591, col.1, lines 59-61). Kleiman discloses, *"Accordingly, it would be desirable to provide a method and system for duplicating all or part of a file system, which can operate with any type of storage medium without either relative complexity or expense, and which can provide all the known functions for data backup and restore. This advantage is achieved in an embodiment of the invention in which consistent copies of the file system are maintained, so those consistent snapshots can be transferred at a storage block level using the file server's own block level operations"* (Kleiman

'118, col.1, lines 37-46). Markson discloses, *"Still another problem in this context*
relates to making back-up copies of data on the storage devices. It would be
cumbersome and time-consuming for an operator of a data center to move among
multiple data storage locations in order to accomplish a periodic back-up of data
stored in the data storage locations. Thus there is a need for a way to provide
storage that can be selectively associated with and disassociated from a virtual
server farm and also backed up in a practical manner" (Markson, para.11).

11.   With regard to *claims 31-32*, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

- *wherein the tree structure is converted back into a map that is sent to the second*
  computer system. (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118,
  col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson,
  para.1-214)

- *further comprising the computer-executed step of building a second volume*
  group on the second computing system that is a substantial copy of the first
  volume group on the first computing system including volume layout and file
  system structure as defined by mapping information originally built on the first
  computer system. (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118,
  col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson,
  para.1-214)

12.   With regard to *claims 33-36*, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

- *further comprising the computer-executed steps of:*

- ▪ *establishing one or more mirrored copies of data that are copies of one or more volumes of data that are part of the first volume group; and* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- ▪ *separating the one or more mirrored copies of data from the respective one or more volumes of data.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *further comprising the computer-executed step of mounting the separated one or more mirrored copies of data on the first or second computer system using the second volume group.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *wherein the first and second computer system are combined.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *further comprising the computer-executed step of:*
  - ▪ *dismounting the separated one or more mirrored copies from the second computer system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

13.   With regard to *claims 37-38*, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

- • *further comprising the computer-executed step of:*

- ▪ *backing up the separated one or more mirrored copies of data to a backup medium.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *further comprising the computer-executed step of:*

  - ▪ *restoring one or more volumes of data from the backup medium or from the one or more mirrored copies of data that are copies of the one or more volumes of data.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

14.   With regard to *claims 39-44*, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

- • *wherein the respective one or more volumes of data that are part of a first volume group on the first computer system are further associated with a first software application.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *wherein a second software application is provided on the second computer system and the separated one or more mirrored copies of data on the second computer system are associated with the second software application.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *further comprising the computer-executed step of:*

- ▪ *backing up the separated one or more mirrored copies of data to a backup medium.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *wherein the second software application has an associated database and the step of backing up the separated one or more mirrored copies of data to a backup medium includes backing up the associated database.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *wherein there is a set of information associated with the database, the set of information comprising at least one type of information selected from the group consisting of tablespaces, archive logs, redo logs, and control files, and wherein at least some of the set of information associated with the database is backed up to the backup medium during the backup step.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- • *further comprising the step of:*

  - ▪ *restoring, from the separated one or more mirrored copies of data, the respective one or more volumes of data associated with the separated one or more mirrored copies of data, and wherein at least some of the set of information associated with the database is used during this step.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

15.   With regard to _claims 46-55_, they are rejected with the same rational as claims 29-38,

        because they have similar limitations as claims 29-38.

16.   With regard to _claims 57-58 and 67-68_, Kleiman '591, Kleiman '118, Barton, and

        Markson disclose,

        - *wherein the map further comprises: information identifying the one or more*
          separated mirrored copies of the data; and information identifying the physical
          address(es) of the mirrored copies. (Kleiman '591, col.1, line 10 – col.13, line 60;
          Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60;
          Markson, para.1-214)

        - *wherein the first operating system is different from the second operating system.*
          (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17,
          line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

17.   With regard to _claims 59-63_, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

        - *wherein the map further comprises at least one set of information selected from*
          the group consisting of information relating to one or more filesystems associated
          with the volumes of data, device serial number, physical address, volume group,
          logical volume name, file type, and mount point. (Kleiman '591, col.1, line 10 –
          col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 –
          col.13, line 60; Markson, para.1-214)

        - *wherein the first operating system is different from the second operating system.*
          (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17,
          line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- *wherein the first operating system is substantially the same as the second operating system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- *wherein the first computer system is a separate and distinct computer system from the second computer system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- *further comprising creating volume group, logical volume, and file system objects on the second computer system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

18.   With regard to <u>*claims 64-66*</u>, Kleiman '591, Kleiman '118, Barton, and Markson disclose,

- *wherein the map further comprises: information identifying the one or more separated mirrored copies of the data; and information identifying the physical address(es) of the mirrored copies.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- *wherein the first operating system is different from the second operating system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118, col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson, para.1-214)

- *wherein the first operating system is substantially the same as the second operating system.* (Kleiman '591, col.1, line 10 – col.13, line 60; Kleiman '118,

col.1, line 5 – col.17, line 62; Barton, col.1, line 6 – col.13, line 60; Markson,

para.1-214)

Response to Arguments

19.   Applicants' arguments with respect to *claims 28, 45, and 56* have been considered but

are moot in view of the new ground(s) of rejection.

Conclusion

20.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Thomas Duong whose telephone number is 571/272-3911. The

examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the

examiner by telephone are unsuccessful, the examiner's supervisor, Jason D. Cardone

can be reached on 571/272-3933. The fax phone numbers for the organization where

this application or proceeding is assigned are 571/273-8300 for regular communications

and 571/273-8300 for After Final communications.

/Thomas Duong/

Patent Examiner, Art Unit 2445

November 15, 2008